

Compact Instrument for Measurement of Atmospheric Carbon Monoxide, Phase II

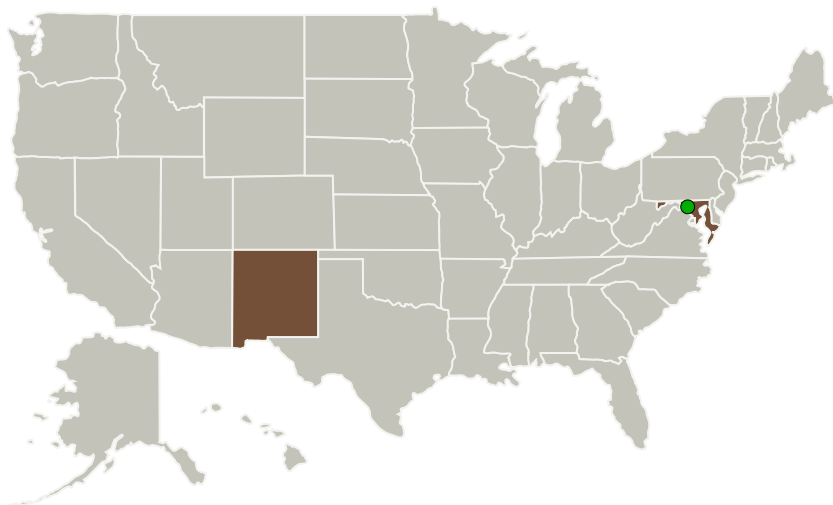
Completed Technology Project (2011 - 2013)



Project Introduction

Southwest Sciences proposes to continue the development of a rugged, compact, and automated instrument for the high sensitivity measurement of tropospheric carbon monoxide (CO) and methane. The application of recently developed room temperature vertical cavity diode lasers (VCSELs) operating near 2300 nm permits the development of sensitive and rugged instrumentation for measurement of both atmospheric CO and methane with high precision. Phase 1 efforts successfully addressed the feasibility of measuring CO to a precision of 10 parts-per-billion or better over a range of tropospheric temperatures, pressures, and humidity. Phase 2 will extend the technology to simultaneous measurement of both carbon monoxide and methane. The principal objective is the development of prototype instrumentation for field testing.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Southwest Sciences, Inc.	Lead Organization	Industry	Santa Fe, New Mexico
 Goddard Space Flight Center (GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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Primary U.S. Work Locations

Maryland

New Mexico

Project Transitions



June 2011: Project Start



August 2013: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138755>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Southwest Sciences, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Alan C Stanton

Co-Investigator:

Alan Stanton

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Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.3 In-Situ Instruments and Sensors
 - └ TX08.3.4 Environment Sensors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System